Volume 29, Issue 1, February 1985

JOURNAL OF RHEOLOGY

Editor: Raymond R. Myers
Assistant Editors: Robert C. Armstrong
Edward A. Collins
Shigeharu Onogi*
J. George Savins
Charles L. Sieglaff
A. Silberberg
James L. White

Transactions of the Society of Rheology

* Society of Rheology, Japan

Measurement of Fast Transient and Steady-State Responses of Viscoelastic Fluids with a Sliding Cylinder Rheometer Executing Coaxial Displacements
A. T. Tsai and D. S. Soong 1

A Viscometer for Fast Polymerizing Systems
S. J. Perry, J. M. Castro, and C. W. Macosko 19

Flow of a Polar Fluid between Two Eccentric Rotating Cylinders
M. T. Kamel 37

Characterization Method for a Class of Thermorheologically Complex Materials
B. D. Harper and Y. Weitsman 49

Apparent Slip Flow of Polymer Solutions
Y. Cohen and A. B. Metzner 67

NOTE

Frictional Effects in Compressional Deformation of Gelatin and Starch Gels and Comparison of Material Response in Simple Shear, Torsion, and Lubricated Uniaxial Compression
E. B. Bagley, D. D. Christianson, and W. J. Wolf 103

ABSTRACTS

Abstracts of the Australian Society of Rheology, Second National Conference on Rheology 109

Information for Contributors 117

Volume 29, Issue 2, April 1985

JOURNAL OF RHEOLOGY

Editor: Raymond R. Myers
Assistant Editors: Robert C. Armstrong
Edward A. Collins
Shigeharu Onogi*
J. George Savins
Charles L. Sieglaff
A. Silberberg
James L. White

Transactions of the Society of Rheology

* Society of Rheology, Japan

Mechanical Modeling of the Shrinking and Swelling of Porous Elastic Solids
S. C. Cowin 119

Rheological Model of Pore-Water
I. Ravina and Y. Gur 131

Rheological Properties of Slurry Fuels
S.-F. Lin and R. S. Brodkey 147

Rheological Properties of Disperse Systems of Photosensitive Particles. II. Influence of Particle Aggregation on Slow Relaxation Process
T. Matsumoto, S. Yao, and S. Onogi 177

Extensional Flow of Xanthan Gum Solutions
M. Khagram, R. K. Gupta, and T. Sridhar 191

High-Shear Viscometry with a Rotational Parallel-Disk Device
R. W. Connelly and J. Greener 209

ABSTRACTS

Abstracts, Journal of Society of Rheology, Japan 227

Abstracts, Cahiers du Groupe Français de Rheologie, France 233

Information for Contributors 241

Volume 29, Issue 3, June 1985

JOURNAL OF RHEOLOGY

Editor: Raymond R. Myers
Assistant Editors: Robert C. Armstrong
Edward A. Collins
Shigeharu Onogi*
J. George Savins
Charles L. Sieglaff
A. Silberberg
James L. White

Transactions of the Society of Rheology

* Society of Rheology, Japan

Relations between Creep and Relaxation Functions in Nonlinear Viscoelasticity with or without Aging
C. Huet 245

Viscosity Rise during Free Radical Crosslinking Polymerization with Inhibition
V. M. Gonzalez-Romero and C. W. Macosko 259

Stress Relaxation and Differential Dynamic Modulus of Polyisobutylene in Large Shearing Deformations
Y. Isono and J. D. Ferry 273

On the Origin of Negative Normal Stresses in Sheared or Lyotropic Liquid Crystals
C. E. Chaffey and R. S. Porter 281

Longitudinal Volume Viscosity of Poly(butylene terephthalate)
M. Sanchez-Sancha and J. V. Aleman 307

Molecular Weight Dependency of Rheological Characteristics of Linear Low Density Polyethylene
D. Acierno, A. Brancaccio, D. Curto, F. P. La Mantia, and A. Valenza 323

Direct Yield Stress Measurement with the Vane Method
N. O. Dzuy and D. V. Boger 335

Rheological and Pipeline Flow Behavior of Corn Starch Dispersions
R. G. Griskey, D. G. Nechrebecki, P. J. Notheis, and R. T. Balmer ... 349

NOTES

Do Polymers Really Climb Rods?
O. Hassager 361

The Response of Elastic Fluids to a Step Shear Strain
W. E. Vanarsdale 365

Volume 29, Issue 4, August 1985

JOURNAL OF RHEOLOGY

Editor: Raymond R. Myers
Assistant Editors: Robert C. Armstrong
Edward A. Collins
Shigeharu Onogi*
J. George Savins
Charles L. Sieglaff
A. Silberberg
James L. White

Transactions of the Society of Rheology

* Society of Rheology, Japan

Couette Viscometer Data Reduction for Materials with a Yield Stress
R. Darby 369

Linear Kinetorheological Systems. I. Monomolecular Kinetics with Direct Relaxation of Stored Mechanical Energy into Heat
M. Hennenberg and A. Silberberg 379

Linear Kinetorheological Systems. II. Monomolecular Kinetics with Partial Transference of Mechanical Energy Stored in the Reagents to Relaxation Mechanisms of the Products
M. Hennenberg and A. Silberberg 415

Multi-Dimensional Flow Analysis of Solid-Liquid Mixtures
M. C. Roco and N. Balakrishnam 431

Complex Viscosity as a Generalized Response Function
J. Stasna, D. De Kee, and M. B. Powley 457

Rheological Properties of News Inks
G. Pangalos, J. M. Dealy, and M. B. Lyne 471

Volume 29, Issue 5, October 1985

JOURNAL OF RHEOLOGY

Editor: Raymond R. Myers
Assistant Editors: Robert C. Armstrong
Edward A. Collins
Shigeharu Onogi*
J. George Savins
Charles L. Sieglaff
A. Silberberg
James L. White

Transactions of the Society of Rheology

* Society of Rheology, Japan

Equibiaxial Extension of Two Polymer Melts: Polystyrene and Low-Density Polyethylene
P. R. Soskey and H. H. Winter 493

Anisotropic Effects in Dumbbell Kinetic Theory
R. B. Bird and J. M. Wiest 519

NOTES

Stress Relaxation of a Branched Polybutadiene in Double-Step Shear Deformations
K. Osaki, S. Kimura, and M. Kurata 533

Rheological Properties of Liquid Crystalline Copolyester Melts. II. Comparison of Capillary and Rotary Rheometer Results
A. D. Gotsis and D. G. Baird 539

A Rheodilatometer for Molten Polymers
I. Bruker and A. S. Lodge 557

Response to a Rigid Sphere to an Extensional Flow Field Near a Liquid–Gas Interface
R. L. Hoffman 579

Volume 29, Issue 6, December 1985

JOURNAL OF RHEOLOGY

Editor: Raymond R. Myers
Assistant Editors: Robert C. Armstrong
Edward A. Collins
Shigeharu Onogi*
J. George Savins
Charles L. Sieglaff
A. Silberberg
James L. White

Transactions of the Society of Rheology

* Society of Rheology, Japan

Explanation for Slip-Stick Melt Fracture in Terms of Molecular Dynamics in Polymer Melts
Y.-H. Lin 605

Anomalous Migration of a Rigid Sphere in Torsional Flow of a Viscoelastic Fluid. II: Effect of Shear Rate
D. C. Prieve, M. S. Jhon, and T. L. Koenig 639

Flow Past a Radially Oriented Cylinder in a Converging Flow Channel
M. E. MacKay and A. J. McHugh 655

Uniaxial Compression of Bonded and Lubricated Gels
D. D. Christianson, E. M. Casiraghi, E. B. Bagley 671

The Viscoelastic Behavior of Heat-Set Ovalbumin Gels Explained in Terms of a Transient-Network Model
H. Kamphuis and R. J. J. Jongschaap 685

Stress Relaxation in Guayule Rubber
L. F. Ramos-De Valle and S. Sánchez-López 709

Model Analysis of Shear-Flow Behavior of Linear Low-Density Polyethylene (LLDPE) Using a Simple Integral Constitutive Equation
L. M. Quinzani and E. M. Vallés 725

Rheology of Suspensions in Polymeric Liquids
A. B. Metzner 739

Rheology: In the Beginning
H. Markovitz 777

ABSTRACTS

Cahiers du Groupe Francais de Rheologie 799
Abstracts from the Journal of the Society of Rheology, Japan 805
Third National Conference on Rheology
British Society of Rheology Australian Branch 809

Volume 29, Issue 6, December 1985, Part B

JOURNAL OF RHEOLOGY

Editor: Arthur B. Metzner
Assistant Editors: Robert C. Armstrong
Edward A. Collins
Shigeharu Onogi*
J. George Savins
Charles L. Sieglaff
A. Silberberg
James L. White

Transactions of the Society of Rheology

* Society of Rheology, Japan

Raymond R. Myers: An Appreciation
R. F. Landel and W. R. Schowalter iii

Publisher's Note
M. E. Curtis v

Editor's Farewell
R. R. Myers vi

Nonlinear Shear Relaxation Modulus for a Linear Low-Density Polyethylene
R. G. Larson 823

A Rheometer for Characterizing Polymer Melts and Suspensions in Shear Creep and Recovery Experiments
A. J. P. Franck 833

Fractional Rates of Deformation
W. E. VanArsdale 851

Wall Effects for Dilute Polymer Solutions in Arbitrary Unidirectional Flows
P. O. Brunn 859

Constant Viscosity Elastic Liquids
R. J. Binnington and D. V. Boger 887

(Contents continued on next page)

Shear Flow Properties of Semiconcentrated Fiber Suspensions
M. A. Bibbo, S. M. Dinh, and R. C. Armstrong 905

Transient Flow Viscometry
E. Ganani and R. L. Powell 931

Rheo-Optical Studies of Polyelectrolyte Solutions in Simple Shear Flow
B. E. Zebrowski and G. G. Fuller 943

Oscillatory Shear Measurements on Concentrated Dextran Solutions: Comparison with Doi and Edwards' Theory of Reptation
R. R. Rahalkar, C. Javanaud, P. Richmond, I. Melville, and R. A. Pethrick 955

ABSTRACTS

56th Annual Meeting, Society of Rheology, Virginia Polytechnic Institute and State University, Blacksburg,Virginia 971
Abstracts from the Journal of the Society of Rheology, Japan, Volume 12, Number 4, 1984 1025

NOTES

Excess Pressure Losses in a Sudden Contraction
N. D. Sylvester and H.-L. Chen 1027

Comment on the Impulse Approach to Measuring the Equilibrium Modulus of an Evolving Viscoelastic Solid
C. P. Buckley 1035